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# Economic growth in the lowlands of Ethiopia

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## Question

*What are the growth trajectories in the lowlands of Ethiopia? Who is included and excluded from the benefits of growth and why?*

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# 1. Summary

The livestock sector dominates economic activity in Ethiopia's lowlands. Commercial opportunities are expanding as the demand for livestock and livestock products continues to rise. However, livestock wealth is increasingly concentrated in fewer hands and co-exists with widespread impoverishment. The proportion of the lowland population able to secure a viable living from pastoralism is falling. Consequently, a more diverse portfolio of economic activities is growing up alongside it, pursued by the rich out of choice and by the poor out of necessity.

Ethiopia's lowlands cover most of the country's administrative regions, but this review focuses specifically on Afar and Somali regions and on the lowland parts of Oromia region and the Southern Nations, Nationalities and Peoples' Region (SNNPR). The literature on pastoralism and drylands is large. Some parts of the lowlands have been particularly well-researched and have rich panel data stretching back many years; Borana in Oromia is one example. However, a number of studies reviewed for this report note the lack of reliable quantitative data on pastoralism, and consequently the persistent underappreciation of its economic value.

Lowland grazing systems are thought to contribute 35 percent of red meat and 56 percent of milk to Ethiopia's livestock sector GDP (Shapiro, Gebru, Desta, Negassa, Nigussie, Aboset & Mechale, 2017, p. 32). Between 2005 and 2013, official exports of live animals increased by 450 percent and exports of meat by 336 percent, most of these animals supplied from pastoral areas (Catley, Lind & Scoones, 2016, p. 394). These official figures do not include the cross-border trade in livestock, which is estimated at four to six times that of formal exports by volume, and twice formal exports by value (GebreMariam, Amare, Baker, Solomon & Davies, 2013, p. 7).

While livestock sales are the most important contributor to household income across all four regions (Gebremedhin, Woldehanna, Flintan, Wieland & Poole, 2017, p. 26), there is growing concentration of wealth at the top of the income distribution. Average herd sizes have been falling for decades, and now the majority of households in lowland regions no longer have herds that meet the minimum threshold for viability. Grazing land is being lost to enclosures, crop production, irrigation, and foreign investment as natural resources once held in common are progressively commodified. This is undermining the mobility and flexibility which pastoralism needs to manage risk and maximise productivity. As a result, droughts are perceived as having a greater impact than they did in the past and in so doing further widening the gap between rich and poor, as the wealthy have the resources to protect themselves while the poor find themselves forced out of the system.

These trends are contributing to an acceleration of diversification and sedentarisation in lowlands, both within livestock systems and outside them. Activities once regarded as survival strategies by the poor, such as charcoal burning and firewood sales, are now permanent and lucrative businesses. Rain-fed farming is expanding but precarious, and while commercial farms such as those in Afar create some jobs, these are largely seasonal and taken by migrants from the highlands. For the majority, diversification means a fragile portfolio of low-skilled, low-return activities (petty trade, casual labour, local transportation) carried out in and around the lowlands' burgeoning towns and settlements, and dominated by women and the young.

The impacts of these changes in lowland economies are experienced differently by different social groups. Factors such as wealth, gender, age, location, and level of education influence how the benefits of economic growth are distributed. Pastoralism in its conventional form is increasingly associated with age and wealth. Richer households are better positioned to take

advantage of commercial opportunities and to spread their risks in unpredictable and rapidly changing environments. Diversified activities that generate the highest returns, such as livestock fattening, formal sector employment, or investment in urban real estate, require access to social, political and financial capital, all of which tend to favour men rather than women.

Several of the studies reviewed for this report conclude that a central element of any economic development strategy in lowlands should be education and skill development, particularly of women and girls. Apart from its intrinsic good, this is seen as a pathway to opportunity, either within or outside lowland regions. However, there is currently insufficient demand within the economies of these regions to provide jobs for the numbers who already need them, reinforcing the importance of measures that expand employment opportunities for the larger and better-educated workforce of the future.

## 2. Ethiopia's lowland economies

### Definitions and data challenges

Ethiopia's lowlands are defined as land below 1,500 metres. Although they cover eight of the country's administrative regions, the brief for this rapid review was to focus primarily on Afar and Somali regions, and on the lowland parts of Oromia and SNNPR.

Pastoralism is the dominant livelihood in these arid and semi-arid areas (and therefore 'pastoral regions' is often synonymous with 'lowlands' in the literature). Pastoralism may be thought of as a system: a range of livestock and non-livestock activities connect through a web of social and economic relationships that extend well beyond lowland areas to highland economies and across the nation's borders (Lind, Sabates-Wheeler & Kohnstamm, 2016, p.12). As in other parts of the Horn of Africa, pastoralism in Ethiopia is undergoing profound change (Lind et al, 2016; Rettberg, Beckmann, Minah & Schelchen, 2017). The nature and balance of activities within the system is evolving, while a diverse portfolio of economic activities is growing up alongside it, complementing or competing with it to varying degrees.

While the literature on pastoralism and drylands is large, several of the reports studied for this review note that there is limited reliable quantitative data (De Haan, 2016; Headey, Taffesse & You, 2014; Lind et al, 2016; World Bank, 2016a and 2016b). Authors point to gaps at both ends of the spectrum, from macro-economic models (Headey et al, 2014) to household survey data and livestock numbers (Shapiro et al, 2017; Rettberg et al, 2017). Past surveys were often biased towards accessible areas, although representativeness is said to be improving (World Bank, 2016a). Longitudinal data is a particular challenge, as is the fact that datasets structured around administrative units fail to capture the fluidity of pastoral systems (Lind et al, 2016).

One consequence of these limitations is that the contribution of pastoralism to national economic development is systematically undervalued (Little, Behnke, McPeak & Gebru, 2010a). The literature contains numerous examples of the relative invisibility of lowland regions in general, and pastoralism in particular:

- The Household Income Consumption and Expenditure (HICE) Survey has been tracking poverty and welfare in Ethiopia every five years since 1995/96, but its sample only included 'non-sedentary' areas of Afar and Somali regions for the first time in 2015/16 (National Planning Commission, 2017).
- Calculations of agricultural GDP are based on livestock production but not the benefits of livestock services, such as animal power for transport and haulage;<sup>1</sup> nor do they capture the cross-border trade in live animals which is a dominant feature of some lowland economies (Behnke & Metaferia, 2011).
- Estimates of job creation on large irrigated farms in pastoral areas are not balanced by estimates of 'job losses' in the pastoral sector if these investments curtail access to dry season grazing and water (Headey et al, 2014).

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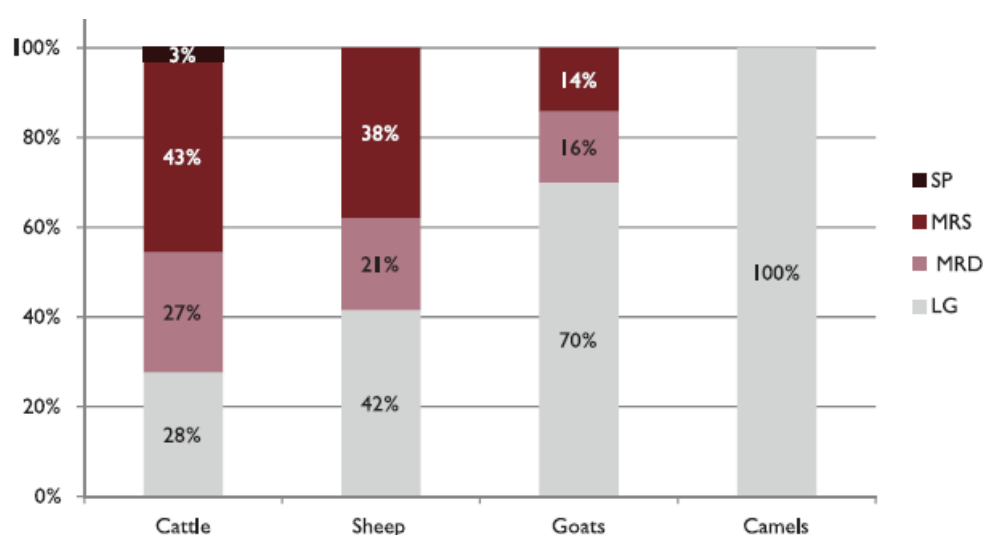
<sup>1</sup> These have since been included in analysis by Shapiro et al, 2017, produced to inform the second Growth and Transformation Plan, 2015/16-2019/20.

Other papers highlight specific knowledge gaps relevant to a discussion of growth and diversification in pastoralist areas. These include women's contribution to pastoralist economies (Watson, 2010), and urban investments made by wealthy pastoralists (Coppock, Bailey, Ibrahim & Tezera, 2018). Another layer of uncertainty, in these climate-vulnerable lowlands, concerns climate projections (Kumari Rigaud, de Sherbinin, Jones, Bergmann, Clement, Ober, Schewe, Adamo, McCusker, Heuser & Midgley, 2018, p. 133 and Appendix B).

## Economic profile of lowlands

The pastoral and agro-pastoral population of the four regions is estimated at approximately 10.5 million, with the largest proportion in Somali region (55 percent) followed by Oromia, Afar and SNNPR (21, 17 and 7 percent respectively). The average population growth rate is 2.6 percent.<sup>2</sup> The livestock sector dominates lowland economies (Headey et al, 2014) and is expected to continue doing so, even if the proportion of the population practising pastoralism reduces (Little et al, 2010c). Figure 1 illustrates the percentage distribution of livestock in Ethiopia by production system: browsers (camels and goats) are the principal species found in the lowlands, alongside significant populations of sheep and cattle.

Figure 1: Percentage distribution of Ethiopian livestock by major production system (Shapiro et al, 2017, p. 9)<sup>3</sup>



Lowland grazing systems (both pastoral and agro-pastoral) contribute 35 percent of red meat and 56 percent of milk to livestock sector GDP (Shapiro et al, 2017, p. 32). The higher proportion of milk illustrates its significance in pastoral production (Little et al, 2010a). Table 1 summarises the contribution of the livestock sector as a whole to Ethiopia's GDP. While the share of agriculture in GDP is falling, and while the services sector has recently replaced agriculture as the main source of growth, the majority of people still depend on agriculture for their livelihood,

<sup>2</sup> Population data is taken from a draft World Bank document, the figures computed from the Central Statistical Agency's population projections for 2014-17. Figures include only those *woredas* identified by the regions as pastoral or agro-pastoral. There are thought to be 33 pastoral/agro-pastoral *woredas* out of 265 in Oromia, and 12 out of 135 in SNNPR (World Bank, 2016a, p. 59).

<sup>3</sup> SP: specialised production; MRS: mixed rainfall sufficient; MRD: mixed rainfall deficient; LG: lowland grazing.

reinforcing its importance for poverty reduction (United Nations Development Programme, 2015; World Bank, 2016b).

Table 1: Contribution of livestock to GDP (Shapiro et al, 2017, p. xviii)

|                                      | Value (ETB)   | Contribution to national GDP | Contribution to agricultural GDP |
|--------------------------------------|---------------|------------------------------|----------------------------------|
| Direct contribution of livestock     | 150.7 billion | 17%                          | 39%                              |
| Plus processing and marketing        | 35.6 billion  | 21%                          | 49%                              |
| Plus organic fertiliser and traction | 37.8 billion  | 25.3%                        | n/s                              |

The sale of livestock is the most important contributor to the cash income of both pastoral and agro-pastoral households in all four lowland regions under review (Gebremedhin et al, 2017, p. 26). Table 2 presents five livestock-based livelihood categories used in a recent baseline survey, and the distribution of these, to illustrate some of the diversity both within livestock-based systems and across the four regions.<sup>4</sup>

Table 2: Proportion of households by livelihood type (%) (Gebremedhin et al. 2017, p. 16)

|  | Afar | Somali | Oromia | SNNPR | Total       |
|--|------|--------|--------|-------|-------------|
| 'Pure' pastoral household; no permanent residence; 100% income from livestock; no crop growing; no other income generation activities  | 51.0 | 36.1   | 5.6    | 0.0   | <b>23.6</b> |
| Pastoral household; mobile livestock moved regularly to agreed grazing areas within the <i>woreda</i> ; <sup>5</sup> milking/weak animals kept around settlement; no crop-growing; no other income-generation activities | 11.2 | 34.8   | 13.8   | 29.4  | <b>22.2</b> |
| Agro-pastoral household; mobile livestock moved regularly to agreed grazing areas within the <i>woreda</i> ; milking/weak animals kept around settlement; crop-growing; no other income-generation activities            | 10.5 | 18.1   | 43.9   | 40.9  | <b>28.3</b> |
| Agro-pastoral household; mobile livestock moved regularly to agreed grazing areas within the <i>woreda</i> ; milking/weak animals kept around settlement; crop-growing; other income-generation activities               | 3.1  | 4.6    | 1.6    | 4.8   | <b>3.4</b>  |
| Agro-pastoral household; members own livestock but do not move them from their private land (i.e. livestock are kept in enclosures); crop-growing; other income-generation activities                                    | 24.1 | 6.5    | 35.2   | 25.0  | <b>22.5</b> |

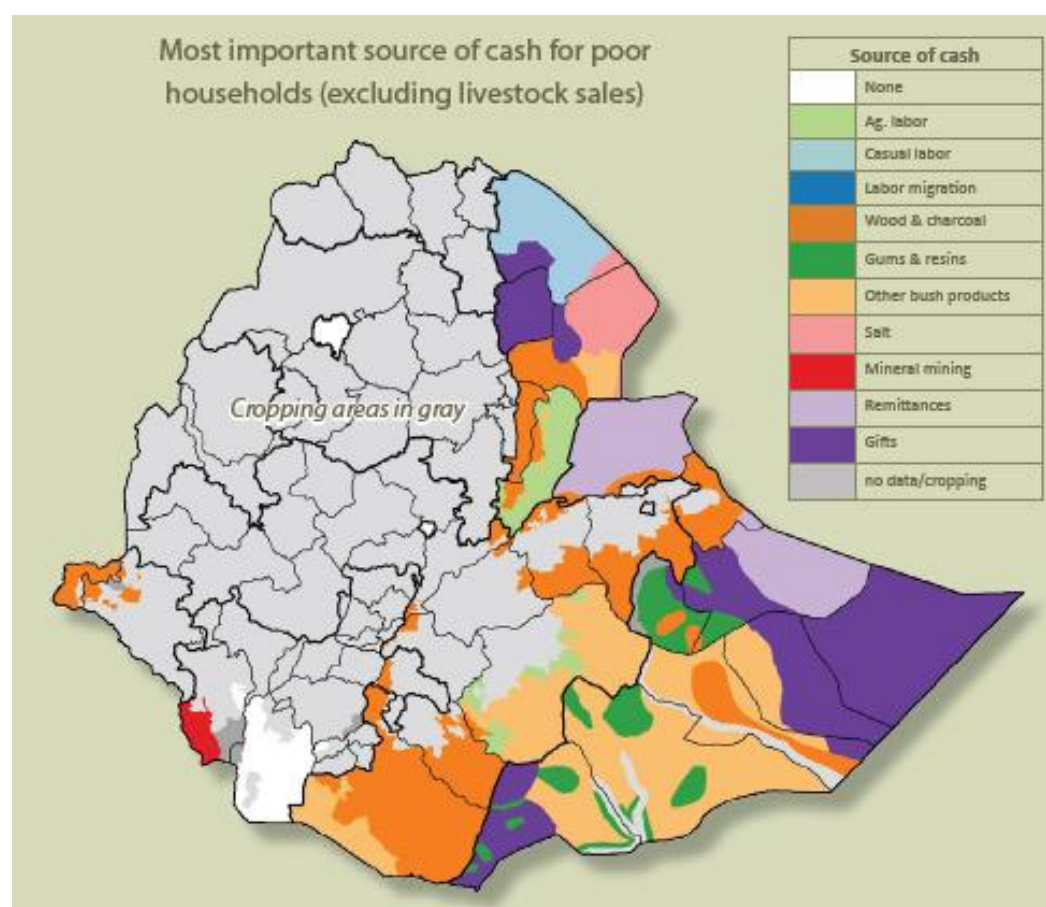
<sup>4</sup> Nine categories were developed – five centred on livestock and four not – but there was no household in the sample that did not own livestock. Given the focus of the programme, only pastoral and agro-pastoral households in the four regions were sampled. Data for Oromia relates to Borana zone; data for SNNPR relates to South Omo and Bench Maji zones.

<sup>5</sup> The *woreda* (sometimes *wereda*) is a mid-level government administrative unit, comparable to a district.

Rettberg et al (2017, p. 34) also find that, while households are increasingly combining various livelihood activities, the sale of livestock and livestock products, especially milk, remains the dominant source of income for both poorer and richer households.

The second most important contributor to cash income (all households) varies by region – crop farming in Oromia (Borana) and SNNPR, business in Somali region, and miscellaneous sources such as the Productive Safety Net Programme (PSNP) and other transfers in Afar (Gebremedhin et al, 2017, p. 27). While wealthy households are able to survive on their own resources (livestock, crop sales, land, urban investments), poorer households must rely on a more diverse range of insecure activities. Figure 2 illustrates the various sources of cash income for poor households in lowlands, which include agricultural and casual labour, firewood and charcoal, bush products, gums and resins, salt, mining, minerals and gifts.<sup>6</sup>

Figure 2: Primary source of cash for poor households, excluding livestock sales (GoE/USAID, 2010, p. 59)



While lowland towns are growing in size and number, there is limited employment in sectors such as manufacturing or services; most work is informal and precarious (Rettberg et al, 2017, p. 35). Afar and SNNPR host a significant number of commercial farms and large-scale investments in the energy sector, but these do not necessarily generate local benefits: for example, 80 percent of the approximately 4,000 workers at the Tendaho sugar factory in Afar are seasonal, and most of these come from the highlands (Rettberg et al, 2017, p. 35). Economic infrastructure is

<sup>6</sup> Poorer agro-pastoralists in lowlands primarily grow crops for household consumption, rather than for sale (Food Economy Group, 2015, p. 7).



generally poor, although there is an upward trend in both public investment in roads and private investment in the processing of livestock and livestock products, such as a new export slaughter house in Jigjiga, Somali region.

The poverty headcount in the lowlands, like other parts of the country, has been falling steadily since 1999/2000, in both the rural and urban populations, and is broadly similar across the four regions, ranging between 20.7% in SNNPR and 23.9% in Oromia (National Planning Commission, 2017, p. 21). However, human development indicators and multidimensional poverty are significantly worse in Afar and Somali regions; the Human Development Index in Afar in 2012/13 was 0.361, compared with the national average of 0.461 (UNDP, 2015, pp. 28-34; OPHI, 2017).

### 3. Scenarios and trends

The literature reviewed for this report describes a number of possible scenarios and identifies a number of critical trends and drivers that are transforming the economies of Ethiopia's lowlands and will continue to do so in the years to come. Three reports over the last ten years have set out a range of alternative futures for pastoralist regions. Between the first and the third, levels of optimism appear to have waned.

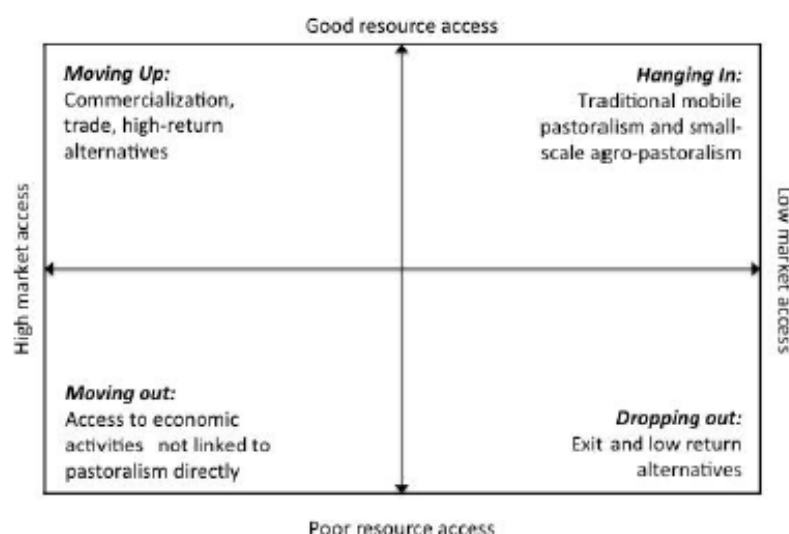
- In 2007, the Pastoralist Communication Initiative (PCI) described four scenarios for 2025 framed by two axes: high and low environmental productivity, and high and low market access. The resulting four quadrants - sustainable pastoral production, an expanding export trade, value-added diversification within the pastoral system, and alternative but complementary livelihoods outside pastoralism – are presented as positive choices for pastoralists and government to make. The authors identify effective systems of governance, including conflict management, as a third factor determining pastoral futures. (UN OCHA Pastoralist Communication Initiative, 2007)
- A few years later, Little et al (2010b) presented two scenarios for pastoralism in 2025: 'One is that of a vibrant and growing pastoral economy that contributes to local and national welfare and economies, supports a range of different market options, builds conflict resolution mechanisms between government and local communities, secures pastoral land rights and mobility, and provides economic options for those exiting pastoralism. The second is that of a depressed and unviable pastoral sector that depends on food aid, aggravates existing conflicts, results in higher national consumer prices for animal products, and leads to steep declines in foreign trade earnings' (Little et al, 2010b, p. 2). The authors identify a number of policy options likely to promote the more positive scenario.
- Rettberg et al (2017) offer two more scenarios, one optimistic, one pessimistic, but conclude that on present trends the pessimistic is more likely. The authors recognise the pressures of population growth and climate variability on lowlands but suggest that institutional factors – particularly governance structures relating to land tenure, social capital and conflict – have the most influence on processes of rural transformation. They identify three priorities for long-term investment likely to generate more positive outcomes: governance, the sustainable intensification of pastoralism, and employment generation, education and skills.

A number of studies have developed the PCI matrix further (Figure 3), using it to illustrate how economic options in pastoral areas diverge (Catley, Lind & Scoones, 2016), and which pathways



are more open to which actors (Lind et al, 2016, p. 31). The rest of this section discusses four of the dominant trends in the economies of Ethiopia's lowland regions.

Figure 3: Livelihood pathways (Lind et al, 2016, p. 15)



## 1. Livestock wealth is growing, but is increasingly concentrated in fewer hands

The livestock trade in the Horn of Africa is described as one of the region's 'few economic success stories' (Little, Waktole & Debsu, 2015, p. 406). Between 2005 and 2013, official exports of live animals from Ethiopia increased by 450 percent, and exports of meat by 336 percent (Table 3); most of these animals were supplied from pastoral areas (Catley et al, 2016, p. 394). However, these figures do not include the dynamic cross-border trade in livestock, estimated at four to six times that of formal exports by volume, and twice formal exports by value (GebreMariam et al, 2013, p. 7).

Demand for livestock and livestock products will continue to expand. Population growth means that the consumption of red meat is projected to grow by about 276 percent between 2013 and 2028, and the consumption of milk by 127 percent. Domestic production is expected to cover 54 percent and 71 percent respectively of these requirements, leaving a significant gap (Shapiro et al, 2015, pp. 36-37).

The commercialisation of the pastoral system has accelerated, although the pace of this varies by region – seemingly faster in Somali and Borana than in Afar and SNNPR. The wealth this generates is becoming increasingly concentrated at the top of the wealth distribution. Analysis of data from ten livelihood zones in Somali region found that, between the late 1990s and the mid-2000s, the number of poor households grew faster than the number of middle-wealth and rich households (Aklilu & Catley, 2013, p. 91). Recent estimates from the north-central region of the Borana Plateau are that the wealthiest ten percent of the population own 64 percent of the cattle while the poorest two-thirds own just eight percent (Coppock et al, 2018, p. 139). Berhanu, Colman and Fayissa (2007) note that, while pastoralism is still the principal source of income in Borana (72 percent), its importance increases with household wealth. There are similar findings in Aba'ala *woreda* of Afar, where the likelihood of continuing in pastoralism increases with wealth (Tsegaye, Vedeld & Moe, 2013, p. 145).

Table 3: Formal live animal and meat exports from Ethiopia, 2005-2013 (Catley et al, 2016, p. 394)

| Year    | Live animals |                   | Meat          |                   |
|---------|--------------|-------------------|---------------|-------------------|
|         | Number       | Value (US\$1,000) | Amount (tons) | Value (US\$1,000) |
| 2005/06 | 163,000      | 27,259            | 7,717         | 15,598            |
| 2006/07 | 234,000      | 36,507            | 7,917         | 18,448            |
| 2007/08 | 298,000      | 40,865            | 5,875         | 15,471            |
| 2008/09 | 150,000      | 77,350            | 6,400         | 24,480            |
| 2009/10 | 334,000      | 91,000            | 10,000        | 34,000            |
| 2010/11 | 472,041      | 148,000           | 16,877        | 63,200            |
| 2011/12 | 800,000      | 207,100           | 17,800        | 78,800            |
| 2012/13 | 680,000      | 150,000           | 16,500        | 68,000            |

Household livestock assets are generally expressed in terms of Tropical Livestock Units (TLU).<sup>7</sup> De Haan (2016, p. xxiv) suggests that a pastoralist household needs 3-4 TLU per capita (half that amount for an agro-pastoralist household) in order to stay out of poverty and protect itself from shocks, but that this minimum threshold is not being met. Average herd sizes have been falling for decades:

- Analysis by Lybbert, Barrett, Desta and Coppock (2004, p. 754) of 17-year panel data in Borana finds that the size of the median household herd fell from 58 cattle in 1980-1 to 29 in 1996-7, with a dip to 22 in the drought year of 1992-3.
- As an illustration of how concepts of wealth are changing, Abebe (2016, p. 65) notes that the threshold below which a household in Borana is not required to contribute to the traditional redistribution mechanism (*bussaa-gonofaa*) has fallen from 25 cattle in the 1970s to 5 cattle today. Only nine percent of sampled households in his study had a herd size above 4.5 TLU per capita.
- Catley (2017) calculates that 80 percent of households in Afar and 90 percent of households in Somali region do not have a minimum herd size (p. 22).
- Tsegaye et al (2013, p. 142) find that the average household size in Aba'ala *woreda* of Afar is 7.6, but that the average household TLU is 6.3.

The reduction in herd sizes has implications for both economic and social status. Below a certain threshold, a herd becomes unviable (Lybbert et al, 2004). There may be a destabilising effect on social relations, given the important role livestock play in pastoral societies in marriage, conflict resolution and inter-clan alliances (Rettberg et al, 2017, p. 31). Traditional mechanisms through which wealth is redistributed from rich to poor are also threatened: first, because the proportion of the population needing assistance is rising while the proportion in a position to help is falling (Abebe, 2016, p. 74), and second, because there may be a reluctance to contribute to networks

<sup>7</sup> One TLU is commonly understood as equivalent to 250kg live weight.

of reciprocal (as opposed to obligatory) social assistance if reciprocity is unlikely to be realised (Catley, 2017, p. 27; Abebe, 2016, p. 63). Coppock et al (2018, p. 142) consider the perspective of wealthy pastoralists in Borana, who continue to donate livestock as custom requires but feel that the poor no longer give their labour in return, preferring cash rather than in-kind payments. However, Tsegaye et al (2013, p. 144) note that practices of mutual help and sharing of food remain strong in Afar.

## **2. Natural resources are being progressively commodified; individualism is supplanting mutuality**

The process of commercialisation extends to the range resources on which the pastoral system depends (Tache, 2013; Rettberg et al, 2017). Natural resources once held in common are subject to increasing commodification, defined by Korf, Hagmann and Emmenegger (2015, p. 888) as ‘the privatization, individuation, valuation and making amenable and marketable, of natural – in this case dryland – resources that were previously held in common’. The examples they discuss from Somali region – of enclosures in Harshin, riverine farming in K’elafo, and urban land markets in Jigjiga – have to a large extent been driven by indigenous (Somali) rather than external capital, though facilitated by the advent of ethnic federalism in the early 1990s.

This differs from the predominantly state-driven investment in Afar, and from which the Afar themselves have derived little direct benefit. Helland (2015) estimates that while less than half of Afar’s irrigation potential of 150,000 – 200,000 hectares (less than two percent of its land surface) has been developed to date, the value of this land to pastoralists far outweighs its size: valuable dry season grazing reserves have been excised from the pastoral system, access to the river curtailed, and water sources polluted (also Flintan, Tache & Eid, 2011). This despite the fact that pastoralism produces returns per hectare equal to, or greater than, the state-subsidised cotton and sugar farms (Behnke and Kerven, 2013).

In their study of diversification in Afar, Somali and Borana, Headey et al (2014) choose to focus on irrigation and large farms; smallholder farming is not considered due to its low returns and exposure to drought which in their view at least equals, if not exceeds, that of pastoralism (p. 205). The authors note the poor implementation performance of irrigation projects, and a concern that their economic potential may not match their hydrological potential. Their discussion of large farm investments focuses on the very small number of permanent jobs created (4,750 from farms occupying 164,046 hectares in Afar). While many more seasonal jobs are likely (70,000), much of this labour is drawn from the highlands (Headey et al, p.207).<sup>8</sup> The authors conclude that education (especially of women and girls), urbanisation and migration should be the focus of diversification strategies in pastoral areas given their likely positive consequences for income, fertility, technical capacity and access to remittances.

Sandford (2013) concurs with Headey et al (2014) that the returns to rain-fed cropping in pastoral areas are low and uncertain, and likely to become more so under climate change. However, he makes a more optimistic case for the place of irrigated agriculture in pastoral areas, particularly if this is driven by the small-scale private sector, if the focus is on food production whose output can then be sold to neighbouring pastoralists, and if the earnings from these schemes and the

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<sup>8</sup> Another national study of large farms in Ethiopia, which included Afar and Oromia in its scope, found that between 2000 and 2014, new commercial farms did not contribute to job creation (either paid jobs or casual labour) and delivered few benefits for neighbouring smallholders (Ali, Deininger and Harris, 2018).

jobs created are localised. Helland (2015) also suggests that small-scale irrigation linked to the livestock sector (such as fodder production) and investments in education are the most obvious avenues for livelihood diversification in Afar. However, Levine, Kusnierek and Sida (2018, pp. 33-34) caution that, while irrigation has brought substantial economic benefits to some, its potential is limited; only a very small proportion of the minority of farmers in Sitti and West Hararghe with access to irrigation technologies were able to produce a reasonable harvest during the drought year of 2015.

One of the most visible signs of commodification in Ethiopia's lowlands is the growth of enclosures. Flintan et al (2011) highlight a number of features common to the process of rangeland fragmentation in Borana and Harshin (Somali region):

- **Commercial opportunities have driven the privatisation process:** examples include ranches to fatten livestock in Borana, and enclosures rented to charcoal burners in Harshin. Ranches are controlled by wealthier members of the community, while charcoal production – once a survival strategy for poorer households – is now a profitable business often favoured by young people. Poorer households in Harshin are able to access enclosures, in part because land is not necessarily physically fenced and therefore requires no financial outlay, and in part because the clan places no restriction on its members doing so, as it does on outsiders. Napier and Desta (2011) concur on this point, although note that enclosures of the more accessible and productive land in Shinille are pushing poorer households to more distant and less productive grazing.
- **Water development has also played a part:** traditionally, permanent water sources in Borana were carefully sited to allow sufficient grazing for livestock within the radius from each well, but externally driven water development projects have disrupted this pattern. The introduction of cement-lined *birkads* in Harshin has enabled year-round grazing and settlement, while owners of private *birkads* use them to generate income (also Korf et al, 2015, p. 890).
- **Individualism is supplanting mutualism:** customary institutions have struggled to prevent or control the privatisation process. Well-connected individuals ignore clan leaders by appealing to *kebele* leaders for support.<sup>9</sup> Elias and Abdi (2010, p. 17) note that the owners of private enclosures further reinforce their holdings by paying land tax to the local administration. However, some individual elders are themselves personally benefiting from the land subdivision process, thus further undermining the authority of customary institutions.

Tsegaye et al (2013, p. 142) note similar trends in Afar, where the practice of managing grazing reserves for the benefit of the whole community has declined as rangeland has become degraded and traditional institutions weakened. In a recent baseline survey across the four regions covered by this review, nearly 30 percent of communal lands identified by households were used all year round. Drought reserves (as opposed to dry season grazing) were only mentioned by informants in Borana, which also hosts 18 of the 20 communal grazing enclosures identified and the only communal enclosure for livestock fattening (Gebremedhin et al, 2017, pp. 64-65).

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<sup>9</sup> The *kebele* is the lowest government administrative unit (comparable to a large village or cluster of villages).

The main land use changes over the past five years mentioned by focus groups across the four regions were the loss of grazing areas, particularly in Somali region, and the expansion of crop growing, particularly in SNNPR (Gebremedhin et al, 2017, p. 61). Large-scale infrastructure investments were cited as one cause of lost grazing. Mengistu (2016) describes the expansion of private farming in Hamer and Bena-Tsema *woredas* of South Omo, SNNPR. Originally a response to drought, it has resulted in the loss of dry season grazing and mobility and an increase in degradation, and yet it suffers from the same ecological and economic constraints as the pastoral system from which it sought to diversify (also Levine et al, 2018). The author further notes the institutional differences between pastoralism and farming. Whereas farm land is individualised, livestock in the study area – even though owned by individual households – are considered collective property and still regulated by community institutions, for example by restricting bulk sales in order to guard against destitution.

Other factors adding to the pressure on dwindling rangeland resources are the spread of invasive species, particularly in Afar (Helland, 2015), investments in the energy and minerals sectors, such as gold and potash in the northern part of Afar and oil exploration in the Middle Awash and Somali region (Rettberg et al, 2017, p. 14), and hydroelectric schemes in SNNPR (Fratkin, 2014). Drawing on interviews with the Ethiopia Investment Agency, Besada (2017) finds that, between 1996 and 2008, 3.5 million hectares of land were leased to foreign investors for large-scale farms, many of these in the lowlands, representing a major shift of land and water rights from customary to foreign users. The paper argues that the regulatory framework governing these investments is not designed to deliver meaningful benefits to their host communities – for example, by requiring the hiring of local labour, or adequate investment in local infrastructure; the tax system also favours investors producing export crops – and advocates a more inclusive approach to agricultural investment.

### **3. Droughts appear to be having more impact than in the past, deepening both poverty and inequality**

As the natural resource base fragments, it closes off the mobility and flexibility needed to manage risk. Droughts are a cyclical feature of lowland environments, although the literature differs on whether rainfall patterns are actually changing. Headey et al (2014, p. 205) conclude that droughts are becoming more frequent, while Catley (2017, p. 15) suggests otherwise: analysis of rainfall data in the Ethiopia-Somalia-Kenya region over periods ranging from 33 to 88 years found a statistically negative trend in only one of the 18 rainfall stations studied (Teltele, Oromia). His conclusion is that droughts are having more impact than in the past, given that more households have fewer animals, as well as fewer options to manage them over a more restricted landscape. Tsegaye et al (2013, p. 145) make a similar argument, suggesting that it is the structural constraints on coping strategies, such as land use change, that are increasing vulnerability to shocks for pastoralists in Afar.

Successive droughts widen inequality between rich and poor, because those with more wealth have a wider range of assets with which to protect themselves (for example by feeding their livestock on fodder grown in private reserves). Those with smaller herds lose proportionally more, thus contributing to the gradual shift in livestock wealth from poor to rich. Drought-related losses in a big herd may be large in absolute terms, but they have a disproportionate impact in a small herd (Catley et al, 2016, p. 392). Data gathered from households on the Borana Plateau between 1980 and 1997 revealed that the mean offtake rate of those in the lowest quartile of

livestock holdings was seven percent, twice that of the wealthiest quartile (Lybbert et al, 2004, p. 764).

Those with larger herds also recover more quickly after drought. Gebremedhin et al (2017, p. 79) find that nearly 75 percent of households with more than 50 TLU recovered within one year, compared with less than 40 percent of households with less than 10 TLU. Moreover, the primary reason cited by respondents in SNNPR, Oromia and Somali regions for recovery being harder was the loss of grazing land; for respondents in Afar, this was the second most important reason after 'lack of government aid/assistance'.

There is growing awareness of drought's economic costs and of the potential to reduce these through either earlier response or interventions that increase household income and resilience (Venton, 2018). However, investments in resilience are required on a sufficient scale, and as part of a coordinated strategic vision, if they are to have any impact on levels of chronic vulnerability in drylands (Levine et al, 2018).

The Index-Based Livestock Insurance (IBLI) mechanism, now operating in both northern Kenya and southern Ethiopia, is one initiative to mitigate drought risk. Two recent studies investigated some of the factors influencing demand:

- Takahashi, Ikegami, Sheahan, and Barrett (2016) focus on knowledge about the product and its price. They find that the rate of uptake was equal to or greater than that of most other index-based insurance products during their pilot phase, and that price incentives had a significant impact on uptake while consumer education did not. They also find a negative correlation between the level of education of a household head and IBLI uptake, hypothesising that educated household heads may have other sources of formal or informal insurance.
- Bageant and Barrett (2017) look at gender, and find equitable access to IBLI by women and men. Female-headed households purchase insurance at the same rate as men, relative to their share of the population; 21 percent of sampled households were headed by women, most of them widows. However, the authors raise a concern about women's lower social status and speculate whether this leaves them vulnerable to pressure by sales agents.

A cautionary note is provided by Duru (2016), who explores competition between public and private initiatives. Writing not about IBLI, but about index insurance for farmers in Amhara, the author suggests that demand for private insurance is undermined by the provision of government safety nets (in this case PSNP). Another perspective is provided by Desta, Berhanu, Gebru and Amosha (2008, p. 58), who note that insurance could relieve the pressure on traditional safety nets.

#### **4. All these trends are combining to accelerate livelihood diversification and sedentarisation in lowlands**

Diversification has always been a feature of pastoral systems, but the past few decades have seen a change in degree – in the severity of the pressures faced by pastoralists and the range and scale of strategies pursued in response (Little, 2016).

Catley (2017, p.19) draws the following distinctions:



- i. **Adaptations:** changes to the main livelihood activity (such as changes to herd composition or marketing practices for pastoralists)
- ii. **Diversified activities:** those that complement the main livelihood activity, whether livestock-related or non-livestock related
- iii. **Alternative livelihoods:** pursued by those moving out of pastoralism, including a shift to settled agriculture and to urban settings either within or outside pastoral areas.

Little (2016, p.6) refers to the second and third of these as ‘partial diversification’ (i.e. combining other activities with pastoralism) and ‘complete’ (departing from pastoralism). The literature distinguishes not just between the type of activity but also its quality: for example, whether the options available to households are wide or narrow (Little, 2016), and whether they are extractive / competitive with the pastoral system, such as charcoal burning, or non-extractive / supportive, such as apiculture or gums and resins (Abebe, 2016).

Stockless households may still consider themselves pastoralists (Rettberg et al, 2017, p. 35), and be considered so by others, particularly if they remain within pastoral communities. In their study of pastoral drop-outs in Borana, Desta et al (2008, p. 22) note that these families still have the right to benefit from traditional welfare systems, although this depends on them continuing to contribute their labour. Clan members also retain responsibility for women and children if a husband abandons them.

Population growth is one driver of diversification, given the growing numbers of households unable to make a living from livestock (Catley, 2017). A recent study suggests that, by 2050, population growth will result in an increase in population density in most parts of Ethiopia, including the lowlands, of 100-300 percent (Kumari Rigaud et al, 2018, p. 136). The same study suggests that internal climate-related migration may also rise, including into parts of the lowlands. At the same time, Coppock et al (2018) raise the prospect of labour shortages within the pastoral system, driven in part by changing attitudes among the young and their preference for a different kind of future. Berhanu et al (2007) describe the gradual shift of surplus labour out of livestock production and into crop farming, particularly during the wet season when demand is lower (labour requirements rise in the dry season when animals are watered from deep wells).

Given the continued importance of livestock production to lowland economies, a number of studies note that diversification should not undermine the pastoral system and that efforts to improve the policy environment for pastoral development should continue (Headey et al, 2014; Little et al, 2010b; Rettberg et al, 2017). Nor should it be assumed that diversification will necessarily improve outcomes; the activities may generate little return, or be vulnerable to the same shocks and stresses as pastoralism (Levine et al, 2018; Mengistu, 2016). Little et al (2010b, p. 46) argue that ‘there simply are no other cost-effective and environmentally appropriate alternatives to mobile pastoralism for large parts of the country’s lowlands’, while Headey et al (2014, p. 202) write that ‘for the foreseeable future, pastoralism is simply too big to fail’.

The rest of this section provides further detail on four aspects of diversification in Ethiopia’s lowlands: livestock-based, non-livestock-based, urbanisation, and education.

#### Livestock-based diversification

Production and marketing behaviours are changing across the four regions. In a recent baseline survey in Somali region, milk sales accounted for 30-60 percent of annual cash income for



middle-wealth households in six of the eight pastoral zones reviewed (the other two livelihood zones being further from urban markets); in the previous survey ten years earlier, this figure did not exceed 30 percent. The authors suggest that households are either strategically targeting towns, or that milk prices have risen due to increased demand from a larger urban population (Food Economy Group, 2015, p. 15).

Abebe (2016) describes a number of changes within the Boran pastoral system, including fewer cattle and more small stock and camel within the herd; new breeds that, while less productive, require less feed; and more diverse uses of the enclosures that were once only a dry season reserve for calves, such as for fattening and hay production (Abebe, 2016).

Much of the value-added diversification within the livestock sector currently takes place outside pastoral areas, reducing the benefits to producers and local traders (Little, 2016). In their baseline study of the four regions, Gebremedhin et al (2017, p. 82) found that sampled households did not process hides and skins (except 0.5 percent of those in Afar). Moreover, no household reported processing dairy products, except 0.5 percent of pastoralists in Afar and 0.5 percent of agro-pastoralists in SNNPR, a finding which surprised the authors.<sup>10</sup>

A recent study of mobile phone use in Borana demonstrates how the technology is contributing to growth and diversification in the livestock trade (Debsu, Little, Tiki, Guagliardo & Kitron, 2016). While the authors point to the more advantageous position of traders versus herders, in terms of access to the network and electricity for charging, they find that the traders' use of phones is enabling them to penetrate more remote pastoral areas and link these high-production sites with market opportunities. This is expanding the options for herders, who were previously limited to selling in lower-priced local markets or across the border in Kenya. The authors' preliminary analysis is that the three strongest predictors of the price a herder might receive are herd size, the volume of animals sold, and mobile phone ownership (Debsu et al, 2016, p. 49).

### Non-livestock-based diversification

While many of these activities are of long-standing, their duration and intensity are increasing. Charcoal and firewood sales in Borana, for example, have become a permanent business when once they were a temporary survival strategy (Abebe, 2016, p. 63).

Wage-based diversification is increasing: the percentage of households in Borana in waged employment (including cash for work schemes) rose from two percent in 2000 to 18 percent in 2013 (Little, 2016, p. 9). However, this labour is generally low-skilled. Of households who left the pastoral system in Borana, 89 percent were unskilled and 82 percent were illiterate (Desta et al, 2008, p. 40).

Non-traditional land use systems are typically not governed by established institutional mechanisms for dispute resolution and therefore increase the risk of conflict, particularly if the activity takes place in valuable parts of the rangeland (such as crop cultivation in valley bottoms (Desta et al, 2008, p50). As the authors note, 'institutions may evolve more slowly than land use patterns'.

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<sup>10</sup> It is not clear whether 'processing' in this context includes ghee, which is an important activity in Somali region in particular (Food Economy Group, 2015).

Opportunities for diversification are location-specific. One example is gums and resins in Borana, where the diversity of species is unusually rich. Their harvesting and sale is the third most common non-pastoral activity in the zone (after crop farming and PSNP participation), but it also reinforces pastoralism because the spatial distribution of the gum- and resin-bearing trees encourages mobility. Its economic value is illustrated by the size of export earnings (US\$72 million between 1997 and 2010) and by the growing involvement of wealthier households in the trade (Abebe, 2016).

### Urbanisation

Between 2006 and 2008, the urban population (including tertiary towns of 20-50,000 people, and urban villages of 2,000-20,000) in all four regions grew around twice as fast as the rural population (Rettberg et al, 2017, p. 47). Desta et al (2008, p. 24) suggest that those leaving the pastoral system may use the smaller emerging centres as a staging post while they adjust to urban life.

Patterns of urbanisation across the four regions vary. For example, in Somali region, both the urban population and the owners of urban businesses are predominantly ethnic Somali; the same does not hold true for Afar, where non-Afar are much more economically dominant (Little et al, 2010b; Rettberg et al, 2017). The relationship between Somali pastoralists and urban centres is also of long standing (Little, 2016).

Desta et al (2008) comment on potential rural-urban synergies, arguing that the rural sector can be a source of capital for urban growth (also Coppock et al, 2018), while the urban economy generates demand for pastoral products and absorbs surplus labour. However, rural-urban links are not yet beneficial. Urban employment is generally informal and low-skilled, and dominated by women, the entry barriers to remunerative diversification being skills, contacts and capital (Desta et al, 2008, p. 53). Unplanned settlements create environmental problems, both for their residents and for rural producers (for example, by disrupting grazing patterns).

In theory, urban growth and employment create opportunities to benefit from remittances. Remittances in Ethiopia were officially valued at US\$ 3-3.5 billion in 2014-15, and estimated at 7.4 percent of GDP. Some reports suggest that the actual volume may be higher, given informal flows. Remittances have been increasing year on year and are projected to overtake official aid, which was US\$ 3.8 billion in 2013 (Carter and Rohwerder, 2016, pp. 29 and 31). Remittances are less important to the Afar economy than the Somali, partly because Somali diaspora networks are more extensive, and partly because of bureaucratic constraints on diaspora investment within the region (Rettberg et al, p. 46). Abebe (2016, p. 62) finds that the proportion of households in Borana receiving remittances is increasing, though still relatively small (around eight percent of households). He also notes that some households did not need to turn to clan-based assistance after the 2010-11 drought because of access to remittances.

### Education

Helland (2015, p. 9) writes that 'education is not a sufficient condition for a better future anywhere, but [that] it will become an increasingly indispensable necessary condition'. Many of the studies reviewed for this report emphasise the importance of human capital (education and skill development, particularly for women) as the basis for economic empowerment and positive diversification, both within and outside pastoral areas (Catley, 2017; Rettberg et al, 2016;

Helland, 2015; Headey et al, 2014; Berhanu et al, 2007). Some obstacles to achieving this include the current low levels of educational access and outcomes in lowlands, and the need to reconcile the education system with the realities of pastoralism, particularly mobility and an appropriate curriculum (Little, 2016, p. 82). However, as Rettberg et al note (2017, p. 62), many educated young people find it difficult to secure work, in part because of the limited space afforded to the private sector in Ethiopia's economy at present.

## 4. Who benefits and why

The previous sections have suggested that the main factors determining the distribution of benefits from economic growth are wealth, gender, age and location.<sup>11</sup> This section draws some conclusions against each of these.

### Wealth

- One of the principal benefits of wealth in unpredictable and rapidly changing environments such as Ethiopia's lowlands is that it enables individuals and households to spread risk.
- Wealthy households benefit more from commercialisation. They have the resources and connections to take advantage of emerging opportunities, adapt their production to demand, and time their sales to best advantage. The export market for livestock is the most remunerative but also the most demanding in terms of specification. Wealthier producers are better placed to meet these demands. (Rettberg et al, 2016; Little, Debsu & Tiki, 2014).
- Wealthy households benefit more from enclosures (Napier & Desta, 2011). They have the means to secure private enclosures or to pay for access to cooperative enclosures. Since they have more livestock, they will benefit proportionally more from grazing inside the enclosure as well as on common grazing outside it.
- Richer households in pastoral livelihood zones of Somali region are able to derive all their cash income from their livestock (and in agro-pastoral livelihood zones from livestock and crop sales), while poorer households must rely on a greater mix of sources, including self-employment, petty trade, casual labour and gifts (Food Economy Group, 2015, pp. 14-15).
- Poorer households may obtain relatively more income from crops than livestock because they can rent the cultivated land they own to other households, particularly when facing constraints on their own production, such as lack of inputs or traction (Tsegaye et al, 2013).
- Certain livestock taxes are regressive. Taxes on shoats, for example, disproportionately affect poorer herders and traders (including women), who are less likely to trade in cattle or camel. On the basis of livestock prices in southern Ethiopia in 2013, Little et al (2015, p. 415) calculate that the tax burden on those trading in small stock was 2.5 times those trading in large stock.

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<sup>11</sup> A fifth is education, but it has not been possible to review the relevant literature in the time available for this report.

- Different wealth groups may engage in the same activity but their motivation may differ. For example, both rich and poor in Borana have diversified into farming in recent years, the poor in order to meet their food needs and the rich in order to avoid selling their cattle to buy grain. Aware of its economic potential, richer households are now also entering the trade in gums and resins as a wealth accumulation strategy; historically, this activity was limited to households with few or no livestock, mostly women (Abebe, 2016).
- Coppock et al (2018) describe how a group of wealthy pastoralists in Borana built up a portfolio of investments. Nearly all of the 12 were born into poverty, inheriting between two and five head of cattle as young men. None had a formal education. Over time they diversified from cattle holdings to a mixed herd, and then to a combination of livestock and non-livestock investments, including in towns. Livestock and non-livestock investments are complementary for this small group of wealthy individuals: livestock generate high returns in years of average rainfall, while non-livestock activities spread the risk. The authors note the limited capital in small towns in pastoral areas, and that investments by wealthy pastoralists, however small in number, may be an important additional source of finance.

## Gender

- Watson (2010) provides a nuanced explanation of women's access and control over livestock and livestock products, noting that this is partly determined by their ability to exercise informal power over men – which suggests in part why female-headed households are often particularly vulnerable. In his study of Somali region, Devereux (2010) also notes that women's status is socially constructed and context-specific, such that some women will be more marginalised than others (for example those from weak clans).
- Hertkorn, Roba and Kaufmann (2015) find similar flexibility in gender roles among women and men in Borana. While there is still a clear gendered division of labour, this is now being applied with some flexibility. New demands on household time created by changes in the productive environment (and by government-organised communal labour) mean that women and men are increasingly sharing tasks when required.
- New opportunities to market livestock products may exist for women, but practical constraints on their time and mobility, as well as social and cultural constraints, may prevent them from taking advantage of these. On the other hand, as the importance of livestock to the household economy reduces, so the relative status of women and men starts to shift (Watson, 2010).
- Traditionally, the trade in milk has been dominated by women. All the camel milk traders interviewed by Kebede, Animut and Zemedu (2015) in Somali region were women. The study found that camel milk accounted for about 82 percent of producers' total income and 93 percent of traders' total income. However, Catley et al (2016, p. 395) caution that one consequence of commercialisation can be that men take over functions previously carried out by women, particularly if the business grows beyond a certain size (also Watson, 2010).
- Catley (2017, p. 19) notes that positive diversification is generally associated with household wealth, proximity to markets, and social and political capital, all of which are usually more accessible to men than women. Mobile or semi-sedentary women have less access to financial services than urban women (Watson, 2010).

- Flintan et al (2011) highlight how changes in land use affect women and men differently. For example, in Harshin, women previously accessed resources through the clan system, but the enclosure process formalised land rights in men's hands; women benefited only if the clan managed the process of subdivision, and then only widows. Napier and Desta (2011) also find that only men in Somali region have the right to enclose land. Flintan et al (2011) further note the expectation that, as involvement in crop production increases, women will assume responsibility for these tasks alongside their domestic responsibilities.
- Gebremedhin et al (2017, p. 79) find that female-headed households are more pessimistic about their prospects of recovery after shocks than male-headed households. On average, female-headed households had fewer TLUs than male-headed households. Nine percent of male-headed households thought that they would never recover, compared with 17 percent of those headed by women.
- Women's access to education and levels of literacy already lag behind those of men, and therefore measures to improve educational opportunities in lowlands as part of wider diversification strategies need to take account of this pre-existing inequality (Rettberg et al, 2016, Little et al, 2010b).

## Age

- Berhanu et al (2007 and Tsegaye et al (2013) both note that pastoralism is an activity increasingly associated with age. Korf et al (2015) and Coppock et al (2018) both point to the emergence of inter-generational conflict, as younger people display a preference for a more settled life and reject cultural values and institutions.
- Non-pastoral occupations of higher return are generally associated with the rich and the young, who have enjoyed some level of education or exposure (Berhanu et al, 2007).
- In their study of the impact of mobile phone use in Borana on production and marketing Debsu et al (2016) note that, in common with other communities, younger men and women are more likely to own and use mobiles than the elderly. However, this is linked not just to facility with technology but to levels of trust in the information received, particularly when this concerns critical choices such as herd movements. Even if transmitted by phone, rather than by the traditional scout, information is still considered more reliable if received from a friend or family member.

## Location

- Household economy analysis in Somali region finds that the construction of the asphalt road from Jigjiga to Gode had a positive impact on market conditions and led to the growing importance of the markets in Gode and Degahbur in particular (Food Economy Group, 2015, pp. 33-34).
- The same study also finds that remoteness is a factor in areas with high income but low livelihood security. For example, poor households in the Lowland Haud Pastoral livelihood zone have the second highest total income among poor households in the region but the lowest livelihood protection score due to the area's distance from markets. The main staple (wheat) costs over 200 percent more in this zone than in others (Food Economy Group, 2015, p. 24).

- Hirvonen, Sohnesen, and Bundervoet (2015) find that the 2015 drought in Ethiopia increased chronic undernutrition in *woredas* with a poor road network, suggesting the importance of transport infrastructure in addressing the structural constraints to long-term resilience. There was no observable impact on acute undernutrition.
- Little et al (2010b, p. 14) find that transport costs amount to about one-quarter of the total costs of moving animals from lowland areas to fatten and process in the highlands.
- Mengistu (2016) illustrates the challenges of diversification in remote pastoral areas with poor infrastructure and limited market access, such as South Omo. Little et al (2014) and Rettberg et al (2017) both highlight the disjuncture between a system of fixed markets and the mobility required for production, although note that this gap is starting to be filled by bush traders who link herders with intermediaries in the export trade.
- A number of national-level studies also discuss the importance of location, particularly for market access. Poverty rates have been found to increase by seven percent for every 10 kilometres from a market town (World Bank, 2016b, p.18), and while agricultural growth has had a strong impact on poverty reduction in Ethiopia, this has only been in areas close to urban centres of 50,000 people or more, suggesting the importance of proximity to agricultural inputs and urban demand (Hill & Tsehaye, 2018, p. 4).<sup>12</sup>

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<sup>12</sup> However, agricultural output in this study did not include livestock output. Lack of poverty data excluded most pastoral areas from the analysis (p. 8).



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